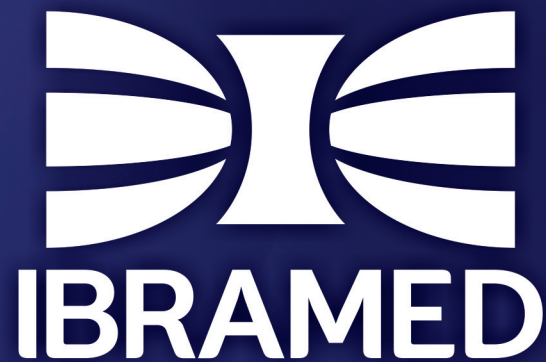




QUESTÃO DE RESPEITO

Instructions Manual



NEURODYN II

Manufactured by
Ibramed - Indústria Brasileira de Equipamentos Médicos EIRELI

Made in Brazil

2nd edition (LASTREV_08/2014)

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Caution: Federal Law restricts this device to sale by or on the order of a practitioner licensed by the law of the State in which he/she practices to use or order the use of this device.

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SYMBOL DEFINITIONS

BELOW ARE THE DEFINITIONS OF THE SYMBOLS USED ON THE EQUIPMENT AND THROUGHOUT THE INSTRUCTIONS FOUND IN THIS MANUAL. UNDERSTAND THESE SYMBOLS AND THEIR DEFINITIONS BEFORE OPERATING THIS EQUIPMENT.



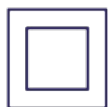
Caution! Refer to user manual.



TYPE BF Electrical equipment.



Dangerous voltage.



CLASS II Electrical equipment.

IPXO

Not protected against the harmful effects of water penetration.



Sensitivity against electrostatic discharge.



Start treatment.



Stop treatment.



Off switch.



On switch.



Voltage in AC (Alternating Current).



Electrical Network in AC (Alternating Current).



SYMBOL DEFINITIONS

ABBREVIATIONS GLOSSARY

CARTON

	Fragile.
	This side up.
	Limits of temperature for storage and packaging in °C (Celsius Degrees).
	Keep away from the rain.
	Stacking up.
	Do not use if the packaging is damaged.
	Refer to operating instructions for correct product use.
	Manufacturer's name and address.

Hz	Hertz (pulses per second)
mA	Milliampere
VA	Volt Ampere
TENS	Transcutaneous Electrical Nerve Stimulation
FES	Functional Electrical Stimulation
Cont	Continuous
Sync	Synchronous
Rec	Reciprocal
VIF	Variation/Phase Duration Frequency
Rise	Time of Increase Gradient
On	Time of Muscular Contraction
Decay	Time of Decrease Gradient
Off	Time of Muscular Relaxation
Manual stm	Manual Stimulation



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This user manual allows the user to efficiently use the **NEURODYN II** Electro Stimulator. It also gives suggestions for treatment protocols so that you can use your equipment to its full potential.

Consult other resources for additional information regarding the uses of electrotherapy before attempting any treatment on a patient. Users must read, understand and follow the information in this manual for each mode of treatment available, as well as the indications, contraindications, warnings and precautions.

The specifications and instructions in this manual are in effect at the time of its publication. These instructions may be updated at any time at the manufacturer's discretion. Visit our website for updates.



NEURODYN II transcutaneous neuromuscular stimulator is a four-channels stimulator with independent controls for current therapies used in: **TENS** (Transcutaneous Electrical Nerve Stimulation), **FES** (Functional Electrical Stimulation) and **Russian Current** (Burst Modulated Medium Frequency).

The equipment is to be used only under the prescription and supervision of a licensed practitioner.



SAFETY PRECAUTIONS

PRECAUTIONARY DEFINITIONS

The precautionary instructions found in this section and throughout this manual are indicated by specific symbols. Understand these symbols and their definitions before operating this equipment prior to therapy session.



CAUTION

Text with a "CAUTION" indicator refers to potential safety infractions that could cause minor to moderate injury or damage to equipment.



WARNING

Text with a "WARNING" indicator refers to potential safety infractions that could cause serious injury and equipment damage.



DANGER

Text with a "DANGER" indicator refers to potential safety infractions that represent immediately life threatening situations that would result in death or serious injury.



CAUTION

- Read, understand, and practice the precautionary and operating instructions. Know the limitations and hazards associated with the use of any electrical stimulation. Observe the precautionary and operational labels placed on the unit.
- DO NOT operate this unit in an environment where other devices intentionally radiate electromagnetic energy in an unshielded manner.
- This unit should be operated, transported and stored at temperatures between 41°F and 122°F (5°C and 50°C); Avoid damp and dusty environments.
- Check cables and associated connectors before each use.
- The **NEURODYN II** Electro Stimulator is not designed to prevent the infiltration of water or other liquids. The infiltration of water or other liquids could cause malfunction of internal components of the system and therefore create a risk of injury to the patient.
- Disconnect the power plug from the outlet when left unused for long periods of time.



SAFETY PRECAUTIONS



WARNING

- To protect against the risk of fire, only use replacement fuses of the same types and ratings.
- Be sure the unit is grounded by connecting it to a grounded electrical outlet compliant with the applicable national and local electrical codes.
- Powered muscle stimulators should be used only with the lead wires and electrodes recommended for use by the manufacturer.
- Prior to patient treatment become familiar with the operating procedures for each mode of treatment available, as well as the indications, contraindications, warnings and precautions. Consult other resources for additional information regarding the applications of Electrotherapy.
- To prevent electrical shock, disconnect the unit from the power source before performing any maintenance task.
- Keep electrodes separated during treatment. Electrodes in contact with each other could result in improper stimulation or skin burns.
- Stimulation should not be applied over the anterior neck or mouth.
- Severe spasm of the laryngeal and pharyngeal muscles may occur and the contractions may be strong enough to close the airway or cause breathing difficulties.
- Stimulation should not be applied transthoracically to avoid the introduction of electrical current into the heart which may cause cardiac arrhythmia.
- Stimulation should not be applied over swollen, infected, and inflamed areas or skin eruptions such as phlebitis, thrombophlebitis, varicose veins, etc.
- Stimulation should not be applied on or near cancerous lesions.
- Output current density depends on the electrode size. Improper application may result in patient injury. For any question related to the correct electrode size, consult a licensed practitioner prior to therapy session.





- Patients with an implanted neurostimulation device must not be treated with or be in close range of any shortwave diathermy, microwave diathermy, therapeutic ultrasound diathermy or laser diathermy anywhere on their body. Energy from diathermy (shortwave, microwave, ultrasound and laser) can be transferred through the implanted neurostimulation system, can cause tissue damage, and can result in severe injury or death. Injury, damage or death can occur during diathermy therapy even if the implanted neurostimulation system is powered 'off'.
- Equipment not suitable for use in the presence of a flammable anesthetic mixture with air, oxygen or nitrous oxide.

INDICATIONS FOR USE

Indications for Russian waveform:

- Temporary relaxation of muscle spasms
- Prevention or retardation of disuse atrophy in post-injury type conditions.
- Increase local blood circulation.
- Muscle re-education.
- Maintaining or increasing range of motion.

Indications for FES waveform:

- Stimulation of the leg and ankle muscles of partially paralyzed patients to provide flexion of the foot, thus improving the patient's gait.

Indications for TENS waveform:

- Symptomatic relief of chronic (long term) intractable pain.
- Symptomatic relief of post-traumatic acute pain and post-surgical acute pain.

Powered muscle stimulators should only be used under medical supervision for adjunctive therapy for the treatment of medical diseases and conditions.



CONTRAINDICATIONS, WARNINGS AND PRECAUTIONS

CONTRAINDICATIONS

- Do not use this device on patients who have a cardiac pacemaker, implanted defibrillator, or other implanted metallic or electronic device because this may cause electric shock, burns, electrical interference, or death.
- Do not use this device on patients whose pain syndromes are undiagnosed.

WARNINGS

- Do not apply stimulation over the patient's neck because this could cause severe muscle spasms resulting in closure of the airway, difficulty in breathing, or adverse effects on heart rhythm or blood pressure.
- Do not apply stimulation across the patient's chest, because the introduction of electrical current into the chest may cause rhythm disturbances to the patient's heart, which could be lethal.
- Do not apply stimulation over open wounds or rashes, or over swollen, red, infected, or inflamed areas or skin eruptions (e.g., phlebitis, thrombophlebitis, varicose veins).
- Do not apply stimulation over, or in proximity to, cancerous lesions.
- Do not apply stimulation in the presence of electronic monitoring equipment (e.g., cardiac monitors, ECG alarms), which may not operate properly when the electrical stimulation device is in use.

- Do not apply stimulation when the patient is in the bath or shower.
- Do not apply stimulation while the patient is sleeping;
- Do not apply stimulation while the patient is driving, operating machinery, or during any activity in which electrical stimulation can put the patient at risk of injury.
- Consult with the patient's physician before using this device, because the device may cause lethal rhythm disturbances to the heart insusceptible individuals
- Apply stimulation only to normal, intact, clean and healthy skin.

PRECAUTIONS

- TENS is not effective for pain of central origin, including headache;
- TENS is not a substitute for pain medications and other pain management therapies;
- TENS devices have no curative value;
- TENS is a symptomatic treatment and, as such, suppresses the sensation of pain that would otherwise serve as a protective mechanism;
- Effectiveness is highly dependent upon patient selection by a practitioner qualified in the management of pain patients.;



PRECAUTIONS AND ADVERSE REACTIONS

PRECAUTIONS

- The long-term effects of electrical stimulation are unknown.
- Since the effects of stimulation of the brain are unknown, stimulation should not be applied across the head, and electrodes should not be placed on opposite sides of the head.
- The safety of electrical stimulation during pregnancy has not been established.
- Some patients may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium (gel).
- Patients with suspected or diagnosed heart disease should follow precautions recommended by their physicians;.
- Patients with suspected or diagnosed epilepsy should follow precautions recommended by their physicians.
- Use caution when the patient has a tendency to bleed internally, such as following an injury or fracture.
- Use caution following recent surgical procedures when stimulation may disrupt the patient's healing process.
- Use caution if stimulation is applied over the menstruating or pregnant uterus.
- Use caution if stimulation is applied over areas of skin that lack normal sensation.
- Keep this device out of the reach of children.

- Use this device only with the leads, electrodes, and accessories recommended by the manufacturer.
- Use this device only under the continued supervision of a licensed practitioner.

ADVERSE REACTIONS

- Patients may experience skin irritation and burns beneath the stimulation electrodes applied to the skin.
- Patients may experience headache and other painful sensations during or following the application of electrical stimulation near the eyes and to the head and face.
- Patients should stop using the device and should consult with their physicians if they experience adverse reactions from the device.



GENERAL CARE WITH THE EQUIPMENT

SHIPPING DAMAGE

Your **NEURODYN II** Electro Stimulator is shipped complete in one carton. Upon receipt, inspect carton and unit for visible and hidden damage. In case of damage, keep all shipping materials including carton and contact the shipping agent responsible for the delivery of the unit. All claims relating to damage during transport should be filed directly with them. The manufacturer will not be liable for any damage during shipping, nor allow for adjustments unless proper formal claim has been filed by the receiver against the carrier. The carton in which your **NEURODYN II** Electro Stimulator was received is specially designed to protect the unit during shipping. Please keep all shipping materials in case you need to return your unit for servicing.

INSTALLATION, CARE AND CLEANING

Installation Instructions

- Connect the line cord to the back of the **NEURODYN II** Electro Stimulator.
- Plug the line cord into a grounded wall outlet (100/240V - 50/60 Hz).
- Plug the electrode cables into the electrode cable connections.
- Switch on your equipment.

NEURODYN II Electro Stimulator Care Instructions

- Avoid areas subject to vibrations.
- Install the equipment on a firm and level surface, in open air.
- Do not block ventilation.
- Avoid humid, hot and dusty environments.
- Make sure the area around the network cable is free.
- Do not insert objects into device holes.

Cleaning the NEURODYN II Electro Stimulator

Disconnect the system from the power source, wipe with a clean, lint free cloth moistened with water and mild antibacterial soap. If a more sterile cleaning is needed, use a cloth moistened with an antimicrobial cleaner. Do not place the system in liquids.



CAUTION

**CORRECT EQUIPMENT INSTALLATION
PREVENTS SECURITY RISKS**



Electromagnetic Compatibility Guidance



CAUTION

Medical Electrical Devices require special attention regarding Electromagnetic Compatibility (EMC) and must be installed and put into service according to the EMC information provided in the following tables.

Portable and Mobile Radio Frequency (RF) communications equipment can affect Medical Electrical Devices.



WARNING

The use of accessories, other than those listed, except when supplied or sold by Ibramed Indústria Brasileira de Equipamentos Médicos Ltda. as replacement parts for internal or external components, may result in increased emission or decreased immunity of the **NEURODYN II** Electro Stimulator.



ELETRONAGNETIC COMPATIBILITY

Guidance and Manufacturer's Declaration - Electromagnetic Emissions

The **NEURODYN II** is intended for use in the electromagnetic environment specified below. The customer or the user of the **NEURODYN II** should ensure that it is used in such an environment.

Emission Test	Compliance	Electromagnetic environment - guidance
RF Emissions CISPR 11	Group 1	The NEURODYN II must emit electromagnetic energy in order to perform its intended function. Nearby electronic equipment may be affected. The NEURODYN II is suitable for use in all establishments other than domestic those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
RF Emissions CISPR 11	Class A	
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Class A	



ELETRONAGNETIC COMPATIBILITY

Guidance and Manufacturer's Declaration - Electromagnetic Immunity

The **NEURODYN II** is intended for use in the electromagnetic environment specified below. The customer or the user of the **NEURODYN II** should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV by contact ± 8 kV by air	± 6 kV by contact ± 8 kV by air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast Transitories/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV diferencial mode ± 2 kV common mode	± 1 kV diferencial mode ± 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.



ELETROMAGNETIC COMPATIBILITY

Guidance and Manufacturer's Declaration - Electromagnetic Immunity

The **NEURODYN II** is intended for use in the electromagnetic environment specified below. The customer or the user of the **NEURODYN II** should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Voltage dips, short interruptions and voltage variations in power input lines IEC 61000-4-11	$< 5\% U_T$ ($> 95\%$ voltage drops in U_T) 0.5 by cycle $40\% U_T$ voltage drops in ($60\% U_T$) by 5 cycles $70\% U_T$ (30% voltage drops in U_T) by 25 cycles $< 5\% U_T$ ($> 95\%$ voltage drops in U_T) by 5 seconds	$< 5\% U_T$ ($> 95\%$ voltage drops in U_T) by 0.5 ciclo $40\% U_T$ (60% de voltage drops in U_T) by 5 cycles $70\% U_T$ (30% voltage drops in U_T) by 25 cycles $< 5\% U_T$ ($> 95\%$ voltage drops in U_T) by 5 seconds	Mains power quality should be that of a typical commercial or hospital environment. If the user of the NEURODYN II requires continued operation during power mains interruptions, it is needed that the NEURODYN II be powered from an uninterruptible power supply or battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the A.C. mains voltage prior to applications of the test level.



ELETRONAGNETIC COMPATIBILITY

Guidance and Manufacturer's Declaration - Electromagnetic Immunity

The **NEURODYN II** is intended for use in the electromagnetic environment specified below. The customer or the user of the **NEURODYN II** should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Portable and mobile RF communication equipment should not be used no closer to any part of NEURODYN II , including cable than be separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2 \sqrt{P}$ $d = 1.2 \sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 2.3 \sqrt{P} \text{ 800 MHz to 2.5 GHz}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	Where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ^a should be less than the compliance level in each frequency range. ^b



ELETROMAGNETIC COMPATIBILITY

Guidance and Manufacturer's Declaration - Electromagnetic Immunity

The **NEURODYN II** is intended for use in the electromagnetic environment specified below. The customer or the user of the **NEURODYN II** should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	

NOTE 1: At 80 MHz and 800 MHz the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

^a Field strengths set by fixed transmitters, such as radio base stations, telephone (cellular/cordless) telephones and land mobile radios, amateur radio, AM / FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength at the location in which the **NEURODYN II** is used exceeds the applicable RF compliance level above, the **NEURODYN II** should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorientation or relocating the **NEURODYN II**.

^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V / m.



ELETROMAGNETIC COMPATIBILITY

Recommended separation distances between the mobile RF communication equipment and **NEURODYN II**

The **NEURODYN II** is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the **NEURODYN II** can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the **NEURODYN II** as recommended below, according to the maximum output power of the communications equipment.

Rated maximum power output of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: 80 MHz to 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.



NOMENCLATURE

CONTROLS, INDICATORS AND CONNECTIONS

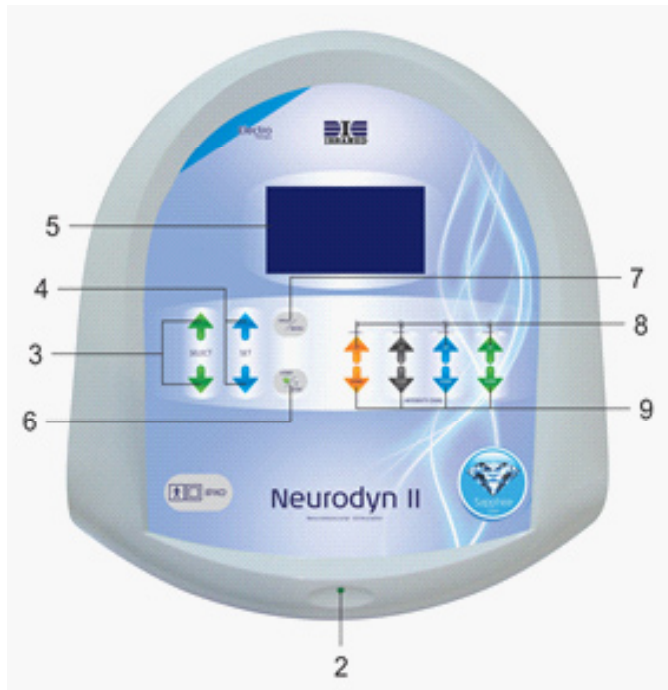


Figure 1. Upper Access Panel.

- 1-** Power ON/OFF Switch.
- 2-** Power On Indicator LED.
- 3-** BACK/NEXT Buttons.
- 4-** SET + /SET - Buttons.
- 5-** LED Display.
- 6-** START/STOP.

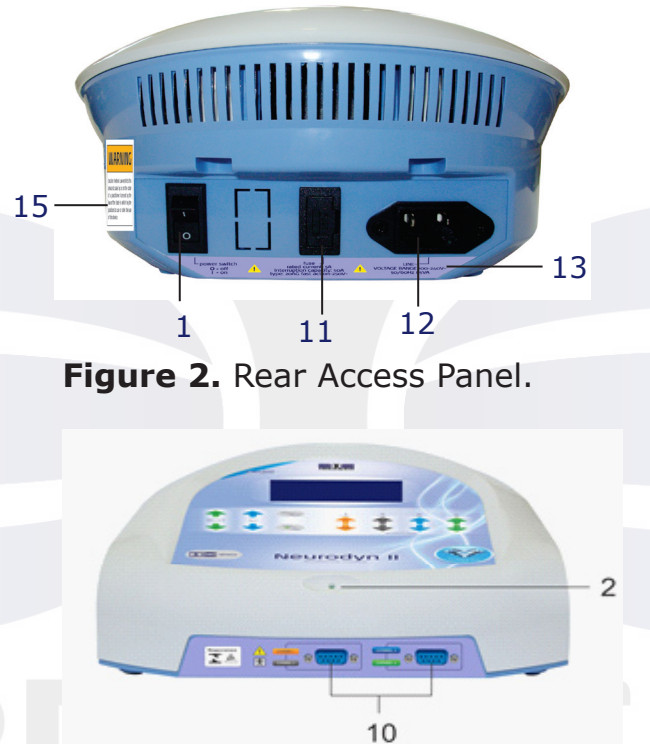


Figure 2. Rear Access Panel.

Figure 3. Front Access Panel.

- 7-** PROG/MENU Button. PROG: Select Protocols, Clinical Resources Library and MENU: Select Language.
- 8-** Channel indicator LEDs.
- 9-** UP/DOWN Intensity Buttons; Channel 1, 2, 3 and 4.
- 10-** Channel Lead Wire Connectors.



Figure 4. Lower Access Panel.

- 11-** Fuse.
- 12-** Line Cord Connection.
- 13-** General Characteristics Label.
- 14-** Current output label characteristics.
- 15-** Caution: Federal Law (USA).
- 16-** Serial Number.



NOMENCLATURE

SYMBOL DEFINITIONS

Read and Understand these symbols and their definitions before operating this equipment.

Before using and operating the **NEURODYN II**, please read and learn the symbols on the LCD device.



Switch used to start or stop treatment.
Always press the center of the switch.



Switch with double function:
PROG Selection of pre programmed protocols and private protocols;
MENU – Selection of language (Portuguese, English or Spanish).



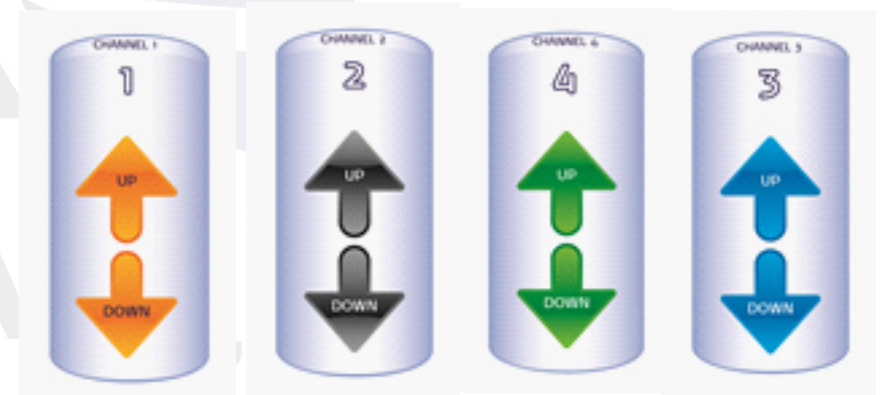
SELECT: switch for the selection of parameters.



SET: switch for selection of values of the parameters.



Channel Lead Wire Connectors. Channel 1, 2, 3 and 4.



UP or **DOWN** Intensity: Channel 1, 2, 3 and 4. Observe the colors related to channels.



SPECIFICATIONS

SYSTEM SPECIFICATIONS

Dimensions

Width: 6.89 in (17.5 cm)
Depth: 10.83 in (27.5 cm)
Height: 4.53 in (11.5 cm)

Standard Weight

(without accessories): 1.3 kg

Power

Input: 100 - 240V~ 50/60 Hz

Input Power: 85 VA

Fuses: 5A 250V~ (20AG)

Electrical Class: CLASS II

Electrotherapy: TYPE BF



Regulatory Compliance

IEC 60601-1
IEC 60601-1-2
IEC 60601-1-4
IEC 60601-2-10

Temperature Range During Transport and Storage:

Between 59 and 104°F.

Environment operating temperature range:

5 - 45 °C / 41- 113 °F.



SPECIFICATIONS

WAVEFORM SPECIFICATIONS

The frequency for Russian is fixed; therefore, the rate of inversion of polarity is also fixed. The frequency is 2500 Hz which represent a period of 0.4 milliseconds, so this inversion of polarity occurs at every 0.2 milliseconds.

Minimum

Russian Fixed in 2500 Hz/ period = 0.4 milliseconds /polarity inversion = 0.2 milliseconds.

Maximum

Russian Fixed in 2500 Hz/ period = 0.4 milliseconds /polarity inversion = 0.2 milliseconds.

For TENS and FES currents, the frequency can be adjusted by the user; therefore, the polarity varies according to the frequency. The frequency may be adjusted between 0.5 to 250 Hz which represents a period from 2s to 4 milliseconds, so the inversion of polarity may vary between 1 second to 2 milliseconds.

Minimum

TENS and FES Frequency minimum = 0.5 Hz /period = 2 seconds / polarity inversion = 1 second.

Maximum

TENS and FES Frequency maximum = 250 Hz /period = 4 milliseconds / polarity inversion = 2 milliseconds.

Between the minimum and maximum frequency the polarity changes by 1 second to 2 milliseconds for TENS/FES and 0.2 milliseconds for Russian.

For example: (Frequency = 250Hz):

Period = $1/\text{Frequency}$

Period = $1/250$ Period = 4 milliseconds.

Inversion Polarity = Period/2

Inversion Polarity = $4/2$, Inversion Polarity = 2 milliseconds.

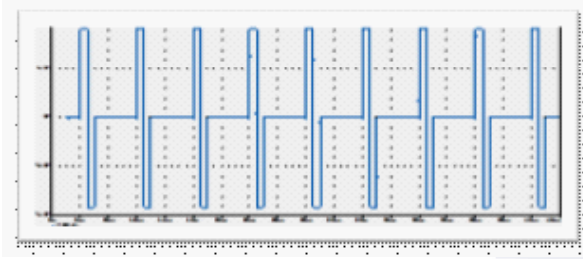
The polarity changes through the type of current chosen (i.e. Russian, TENS or FES) and frequency chosen. There is no direct option to control the polarity. The rate charge depends on the frequency set by the User. There are no specific modes the user can choose to change the polarity.



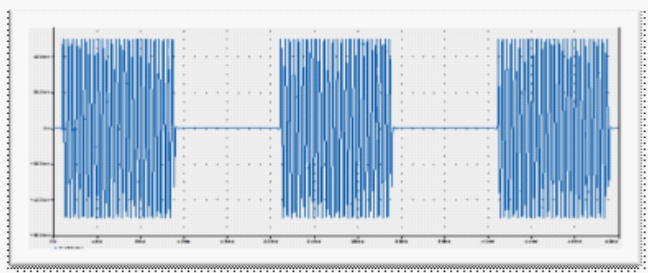
SPECIFICATIONS

WAVEFORM SPECIFICATIONS

TENS and FES Current



Russian Current

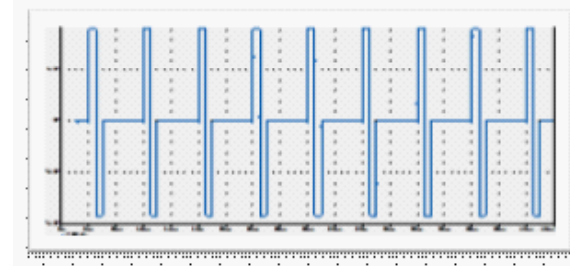


Note: The TENS, FES and Russian are depolarized currents. The Russian current has a fixed frequency of 2.5 kHz (rate of reversal) and TENS and FES current frequency can be adjusted from 0.5 - 250 Hz (reversal rate).

The user chooses the frequency rate (reversal) for the TENS and FES (0.5-250 Hz) modes, according to the desired treatment.

The TENS, FES and Russian presents automatic polarity reversal according to the frequency.

TENS Symmetrical Biphasic



Output Mode	Electrodes
Output Intensity (CC*)	0-120 mA peak to peak
Frequency	0,5-250 Hz
Phase Duration	Adjustable 50-500 µs
Burst Frequency	2 Hz
Modulation of Burst Frequency	250 Hz

Frequency/Phase Duration Variation:	VIF
VIF Frequency	2-247 Hz
VIF Phase Duration	50-500 µs
Current Mode	
Conventional (Normal)	TENS (R 0.5-250 Hz; T 50-500 µs)
Burst Modulation	TENS Burst (R 250 Hz; T 50-500 µs)

Treatment Time	1-60 min
Set Intensity	Individual channel intensity setting 1, 2, 3 or 4.

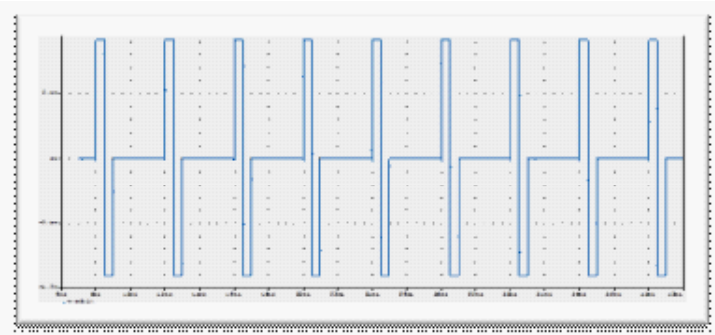
CC* = Constant Current



SPECIFICATIONS

WAVEFORM SPECIFICATIONS

FES Functional Electrical Stimulation



CC* = Constant Current

Output Mode: Electrodes

Output Intensity (CC*): 0 - 120 mA peak to peak

Current Mode

Synchronous: FES Sync (1, 2, 3 & 4 channel)

Reciprocal: FES Rec (1&3, 2 & 4 channel)

Frequency/Phase Duration Variation: VIF

(R 2 - 247 Hz; T 50 - 500 μs)

Frequency: 0.5 - 250 Hz

Phase Duration (Pulse): 50 - 500 μs

VIF Frequency: 2 - 247 Hz

VIF Phase duration: 50 - 500 μs

Ramp

Rise (Time of Increase Gradient): 1 - 9 s

On (Time of Muscular Contraction): 1 - 60 s

Decay (Time of Decrease Gradient): 1 - 9 s

Off (Time of Muscular Relaxation): 1 - 60 s

Treatment Time: 1 - 60 min

Set Intensity: Individual Channel Intensity Setting

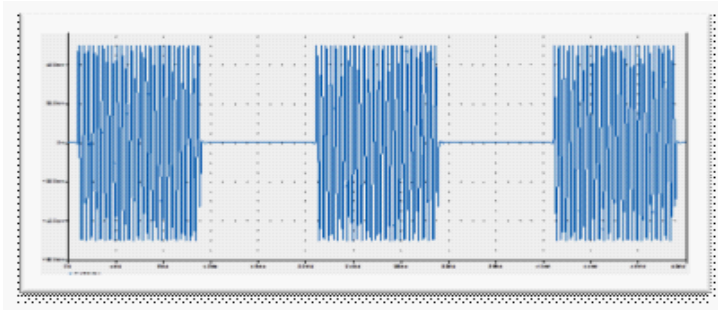
Available on Channels: 1, 2, 3 or 4



SPECIFICATIONS

WAVEFORM SPECIFICATIONS

Russian Current



CC* = Constant Current

Output Mode: Electrodes

Output Intensity (CC*): 0 - 120 mA peak to peak

Current Mode

Continuous: Russian Cont (1, 2, 3 & 4 channel)

Synchronous: Russian Sync (1, 2, 3 & 4 channel)

Reciprocal: Russian Rec (1 & 3, 2 & 4 channel)

Burst Duration (Duty cycle): 10%, 20%, 30%, 40% or 50%

Burst Frequency: 10 - 100 Hz (steps of 10 Hz)

Ramp

Rise (Time of Increase Gradient): 1 - 9 s

On (Time of Muscular Contraction): 1 - 60 s

Decay (Time of Decrease Gradient): 1 - 9 s

Off (Time of Muscular Relaxation): 1 - 60 s

Treatment Time: 1 - 60 min

Set Intensity: Individual Channel Intensity Setting

Available on Channels: 1, 2, 3 or 4



ACCESSORIES USED

TENS, FES or **RUSSIAN**: pin connector cables with banana ends (2 mm) and conductive self-adhesive electrodes (Figure 5).

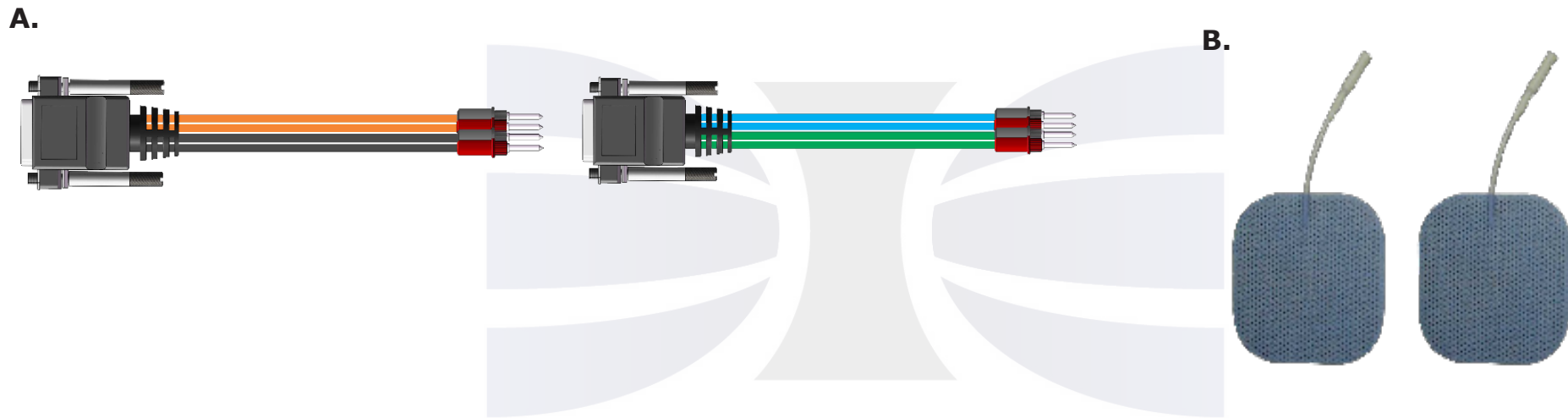


Figure 5. **A**, Pin cables with banana ends (2 mm) and **B**, Self-adhesive conductive electrodes.



ACCESSORIES USED



Figure 6. **A**, the connectors must be fixed to your connection on the panel of the device; **B**, the connector screws must be firmly fixed; and **C**, put the banana pin cable inside the electrode connector and remember that the electrodes must be positioned in pairs on the patient in accordance with the colors of each channel.

NOTE: To remove the banana pins from the self-adhesive electrodes, pull them by their protective cover. Never pull the cord. The TENS, FES and RUSSIAN currents are depolarized currents and they do not require specific positioning for the cathode and anode electrodes, unlike polarized currents. The electrodes must be positioned in pairs on the patient in accordance with the colors of each channel (orange, black, blue and green).

Continuous Current (Polarized) - Charges move always in the same direction it is that in which the continuous flow follows only one direction (Unidirectional).

Alternating Current (Depolarized) - There is the inversion of polarity at regular time intervals, it is that in which the current flows first in one direction then another (Bidirectional continuous flow).



USING THE MENU/PROG BUTTON

USING THE MENU BUTTON

SELECT THE LANGUAGE

The **MENU/PROG** button is used to select the language. Press **MENU/PROG** until you hear three “beeps.” Select the desired language: ‘Português’, ‘Español’ or ‘English’ (figure 7).

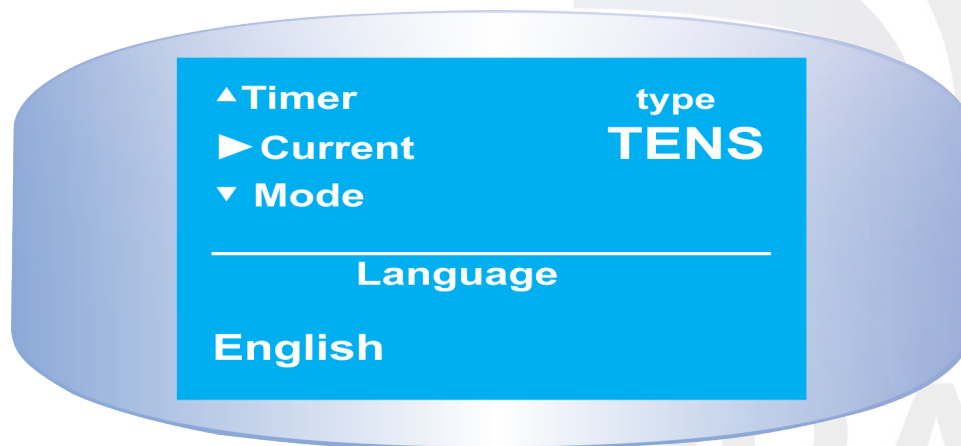


Figure 7. LCD displays the selected language.



OPERATING INSTRUCTIONS

PREPARE DEVICE

Turn the power switch on. LCD displays the message device presentation for a few seconds, followed by the software model of the device default screen programming (Figure 8).

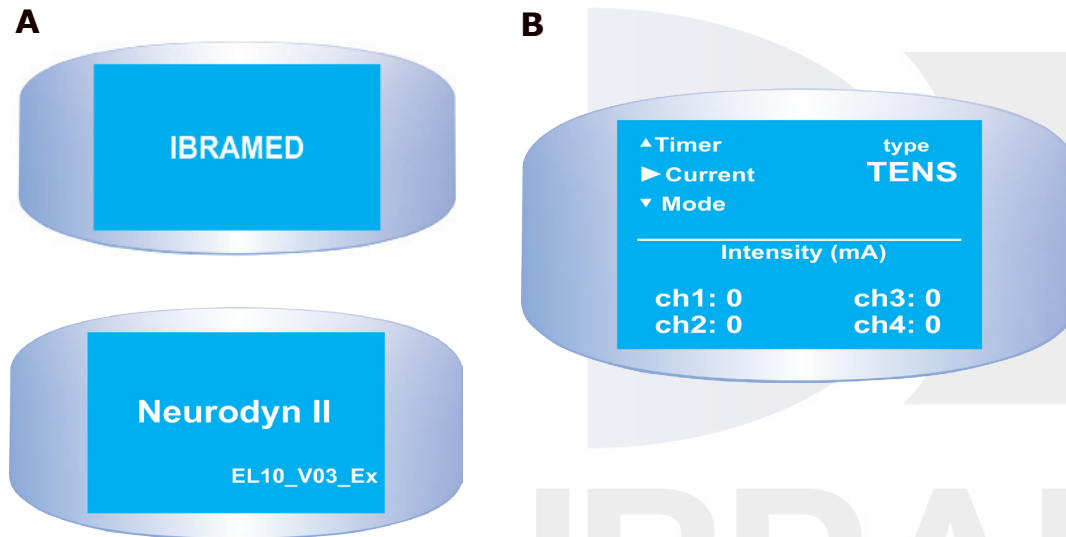


Figure 8. A, LCD Messages; **B, NEURODYN II** Electro Stimulator Default Screen.

Note that entering the default screen will cause the word **TENS** to flash. The 'selection cursor parameters' will appear in the **Current** word and now the device can be programmed.

Edit Waveform Parameter

The **SELECT** buttons allow you to select the parameters required for the treatment. Press the cursor keys to move to the next parameter or rewind the cursor back to the previous setting.

The **SET** buttons allow you to select the values of each parameter required for the treatment.

Time Parameters

Set the session time using the **SELECT** and **SET** keys. Using the **SELECT** key scroll through the parameters until the timer parameter is located. Press **SET** key to select and to choose the timer desired. At the end of the scheduled time, you will hear a beep indicating that the emission current has been interrupted. Press the **STOP** button, the sound signal turns off and the equipment goes back to the programming status.

Start Treatment

Press the **START** button to begin therapy session.

Stop Treatment

Press the **STOP** button to end therapy session.



OPERATING INSTRUCTIONS

Waveform Intensity

The Waveform Intensity may be increased or decreased at any time during the session. Press the **INTENSITY** button **UP** or **DOWN**.

PROGRAMMING EQUIPMENT

Example 1 (TENS): Suppose the clinical practice or literature to suggest certain pathology **TENS** current type with automatic variation of intensity and frequency (VIF ON) and the treatment time of 40 min.

1. Connect the equipment to start programming the pattern described above. Using the **SELECT** key scroll through the parameters until appear "**Current**". After this, press **SET** key to select and to choose the status **TENS**. Note the blinking cursor in the **TENS** field as shown in the figure below.

2. Using the **SELECT** key scroll through the parameters until the desired parameter is located. Press **SET** key to select and to choose the status of the parameter desired. With **SELECT** key press the arrow down or up to move to the next input. Continue in this manner until all parameters are chosen.

A

▲ Mode	status
▶ VIF	On
▼ Frequency	
Intensity (mA)	
ch1: 0	ch3: 0
ch2: 0	ch4: 0

B

▲ Manual stm	min
▶ Timer	40
▼ Current	
Intensity (mA)	
ch1: 0	ch3: 0
ch2: 0	ch4: 0

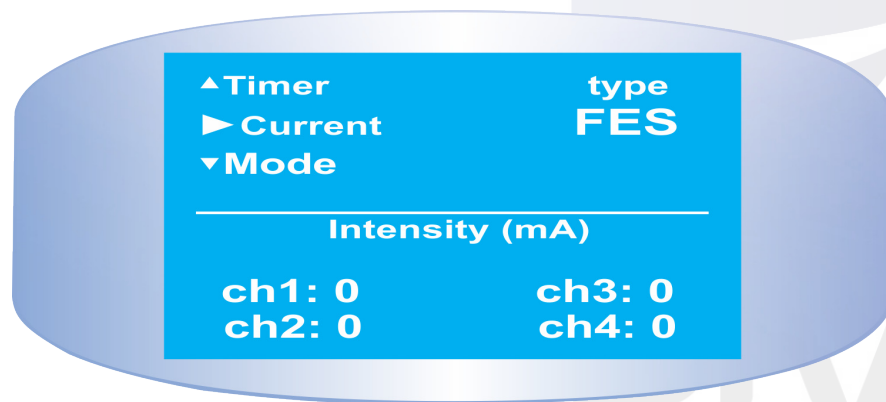


OPERATING INSTRUCTIONS

PROGRAMMING EQUIPMENT

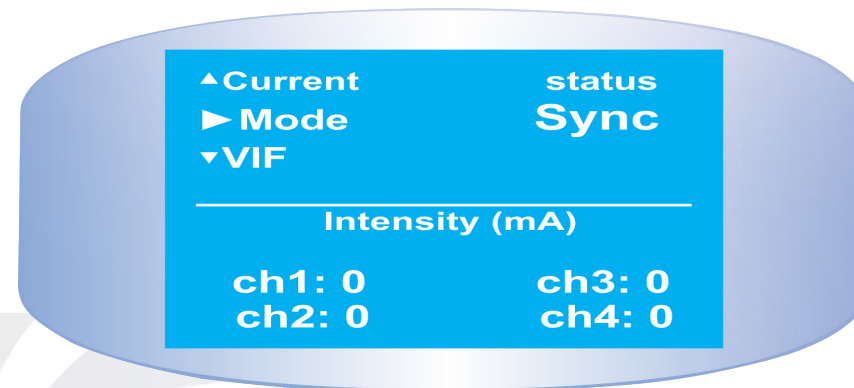
Example 2 (FES): Suppose the clinical practice or literature to suggest certain pathology FES current type, synchronous, 50 Hz, 200 μ s, ramp: Rise 2 s, On 10 s, Decay 2 s, Off 10 s Manual stm and the treatment time of 15 min.

1. Connect the equipment to start programming the pattern described above. Using the **SELECT** key scroll through the parameters until appear "**Current**". After this, press **SET** key to select and to choose the status **FES**. Note the blinking cursor in the **FES** field as shown in the figure below.

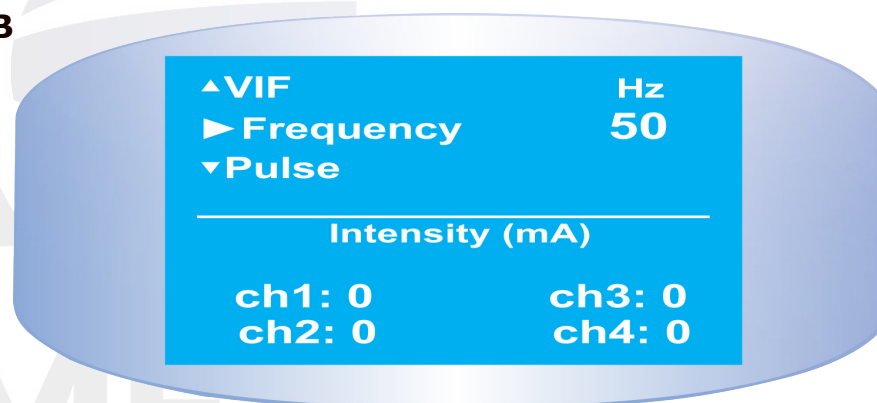


2. Using the **SELECT** key scroll through the parameters until the desired parameter is located. Press **SET** key to select and to choose the status of the parameter desired. With **SELECT** key press the arrow down or up to move to the next input. Continue in this manner until all parameters are chosen.

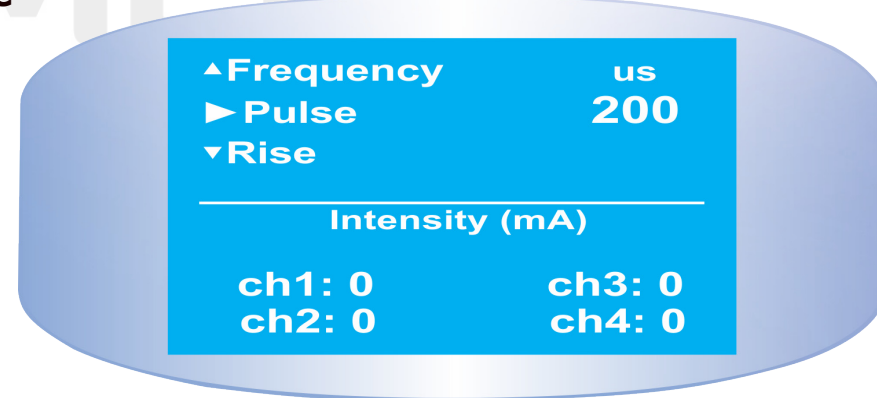
A



B



C



OPERATING INSTRUCTIONS

D

▲Pulse s
►Rise 2
▼On

Intensity (mA)
ch1: 0 ch3: 0
ch2: 0 ch4: 0

E

▲Rise s
►On 10
▼Decay

Intensity (mA)
ch1: 0 ch3: 0
ch2: 0 ch4: 0

F

▲On s
►Decay 2
▼Off

Intensity (mA)
ch1: 0 ch3: 0
ch2: 0 ch4: 0

G

▲Decay s
►Off 10
▼Manual stm

Intensity (mA)
ch1: 0 ch3: 0
ch2: 0 ch4: 0

H

▲Manual stm min
►Timer 15
▼Current

Intensity (mA)
ch1: 0 ch3: 0
ch2: 0 ch4: 0



OPERATING INSTRUCTIONS

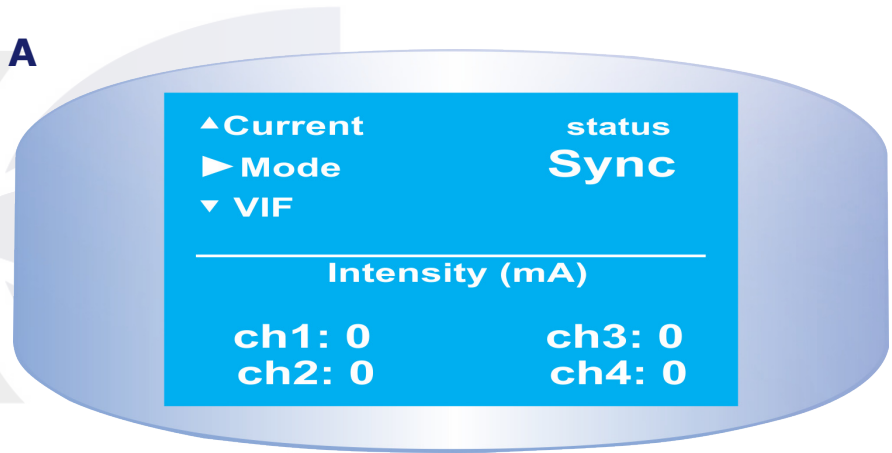
PROGRAMMING EQUIPMENT

Example 3 (Russian): Suppose the clinical practice or literature to suggest certain pathology **Russian** current type, synchronous, 50 Hz, 50%, ramp: Rise 2 s, On 10 s, Decay 2 s, Off 10 s and the treatment time of 15 min.

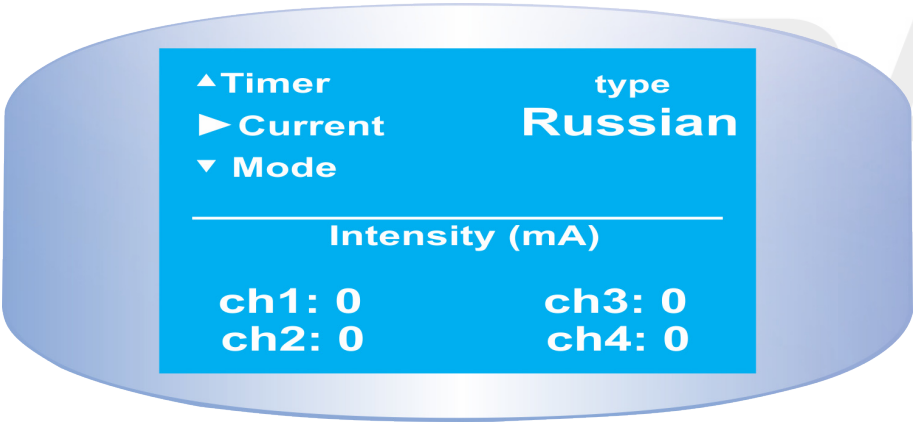
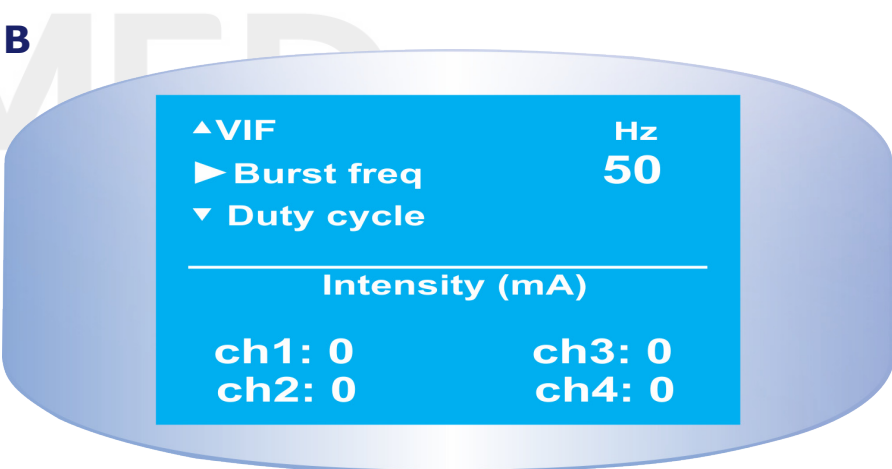
1. Connect the equipment to start programming the pattern described above. Using the **SELECT** key scroll through the parameters until appear '**Current**'. After this, press **SET** key to select and to choose the status **Russian**. Note the blinking cursor in the **Russian** field as shown in the figure below.

2. Using the **SELECT** key scroll through the parameters until the desired parameter is located. Press **SET** key to select and to choose the status of the parameter desired. With **SELECT** key press the arrow down or up to move to the next input. Continue in this manner until all parameters are chosen.

A



B



OPERATING INSTRUCTIONS

C

▲Burst freq %
▶Duty cycle 50
▼Rise

Intensity (mA)

ch1: 0 ch3: 0
ch2: 0 ch4: 0

F

▲On s
▶Decay 2
▼Off

Intensity (mA)

ch1: 0 ch3: 0
ch2: 0 ch4: 0

D

▲Duty cycle s
▶Rise 2
▼On

Intensity (mA)

ch1: 0 ch3: 0
ch2: 0 ch4: 0

G

▲Decay s
▶Off 10
▼Manual stm

Intensity (mA)

ch1: 0 ch3: 0
ch2: 0 ch4: 0

E

▲Rise s
▶On 10
▼Decay

Intensity (mA)

ch1: 0 ch3: 0
ch2: 0 ch4: 0

H

▲Manual stm min
▶Timer 15
▼Current

Intensity (mA)

ch1: 0 ch3: 0
ch2: 0 ch4: 0



OPERATING INSTRUCTIONS

3. Once all parameter are chosen, press the **START** button to begin treatment.

4. Press the **UP** or **DOWN** channel in use to select the amount of current needed to treat.

Note: The intensity adjustment may be made before or after pressing the **START** button. In order to make the intensity adjustment before pressing **START**, the operator must adjust the quantity of current necessary for a particular patient and after pressing the **START** button, a gradual increase in intensity will occur until the quantity of current previously adjusted is reached. In case during the gradual increase in intensity the operator notices that the intensity of current is above the tolerable limit for the patient, press the **DOWN** button so that there is decrease in the quantity of current until the ideal quantity of current for the patient is reached.

5. At the end of the programmed time, the emission current is interrupted and an audible alarm will signal the treatment end.

6. Press the **STOP** button to stop the alarm. The equipment can now be switched off, repeat the same programming task, or undertake a new programming task.

ELECTRODE GUIDELINE

PATIENT PREPARATION

Prepare the patient for therapy as described and read about the use of electrodes.

- Electrode Placement can be achieved using the Bipolar or Monopolar Techniques. Proper positioning and contact will insure treatment comfort and efficiency.
- Examine the skin for any wounds and clean the treatment area by rubbing the skin with medical grade alcohol.
- Remove the self-adhesive electrodes from the protective backing and apply to the treatment area as prescribed.
- Ensure the entire electrode surface is in contact with patient skin by pressing into place.
- Check the electrode contact regularly during treatment.
- Examine the skin again after the treatment.

ELECTRODE - BIOCOMPATIBILITY (ISO 10993): IBRAMED declares that the electrodes supplied with the equipment do not cause allergic reactions. These electrodes must only be put in contact with the integral surface of the skin, respecting the time limit of the duration of this contact of up to 24 hours.



ELECTRODE GUIDELINE

ELECTRODE POSITIONING

Bipolar Electrode Placement Technique

The technique of positioning the bipolar electrodes is used to provide stimulation of the large groups of muscles, such as the quadriceps or ischiotibial muscles. Electrodes of similar size are placed over each extremity of the muscle or muscle group. The Neurodyn II electrostimulator offers wave formats for bipolar stimulation: Transcutaneous Nervous Electrical Stimulation (**TENS**), Functional Electrical Stimulation (**FES**) and Russian Current (**Russian**).

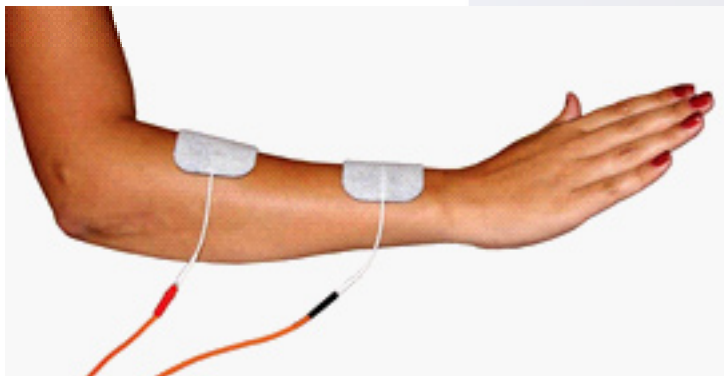


Figure 9. Bipolar Electrode Placement Technique.

Monopolar Electrode Placement Technique

The Monopolar Electrode Placement Technique has been found to be especially useful for muscle stimulation of the upper extremities and small muscle groups. The smaller electrode is placed over the muscle motor point and the larger electrode is placed over the painful area. The Neurodyn II Electrostimulator offers wave forms for monopolar stimulation: Functional Electrical Stimulation (**FES**) and Russian Current (**Russian**).

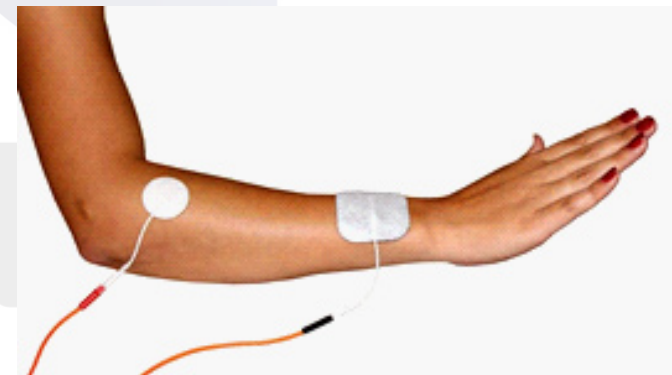


Figure 10. Monopolar Electrode Placement Technique



ELECTRODE POSITIONING

Positioning of the Electrodes for Foot Drop

Positioning of the electrodes on the gastrocnemius muscle
- motor point (on the muscle belly).

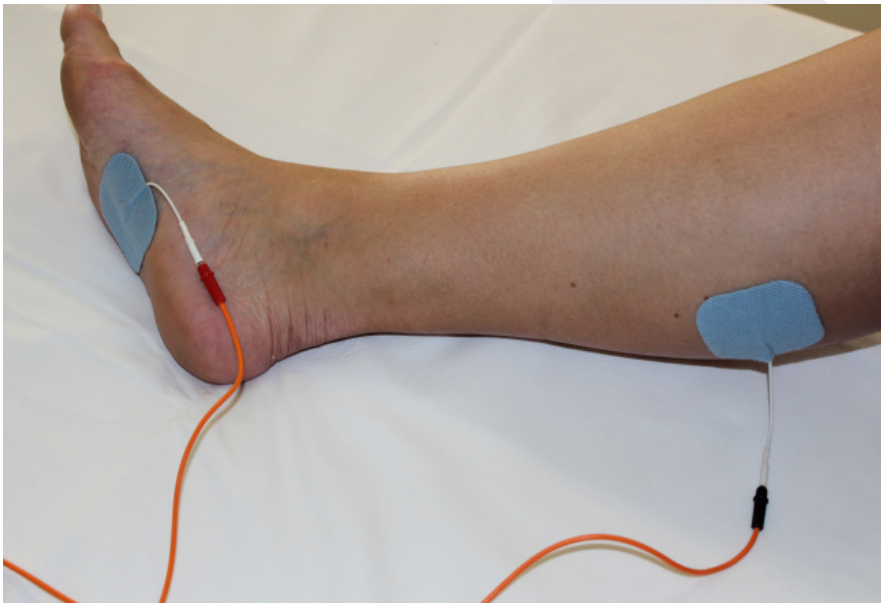


Figure 11. Positioning of the electrodes on the gastrocnemius muscle.

Positioning of the Electrodes for Foot Drop

Positioning of the electrodes on the posterior tibial muscle
- motor point (on the muscle belly).

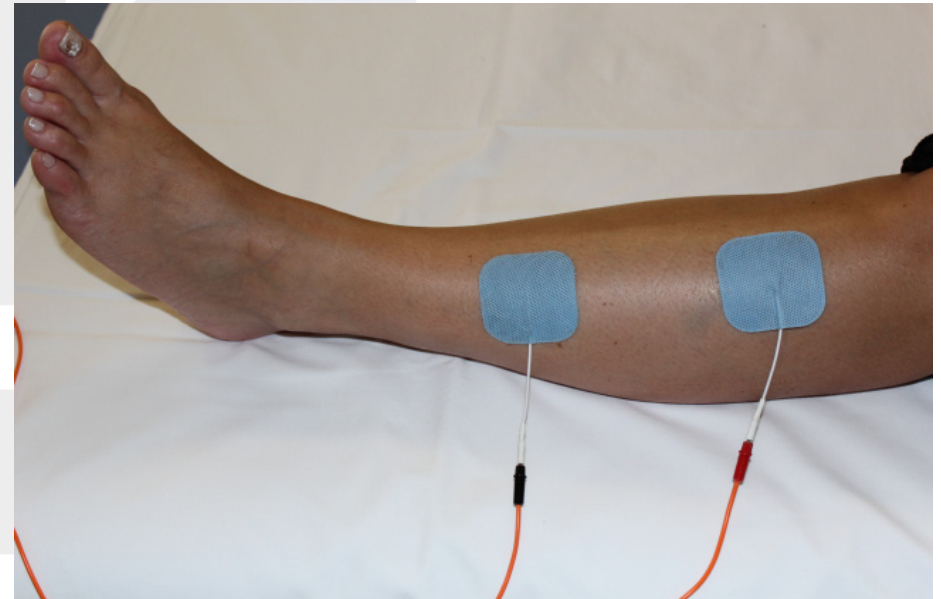


Figure 12. Positioning of the electrodes on the posterior tibial muscle.



ELECTRODE GUIDELINE



WARNING

Placement of the electrodes near the chest may increase the risk of cardiac fibrillation.

Electrode Sizes and Current Density

The size of the electrodes and the energy density used during therapy must comply with IEC 60601-2-10, i.e., the current density per area of electrode should not exceed 2 mA/cm². The smallest electrode size that may be used with this device is 25 cm².

We recommend the use of electrodes provided by Axelgaard Manufacturing Co., Ltd. Fallbrook, CA 92028, USA. FAX +1 (760) 723 2356. www.axelgaard.com.

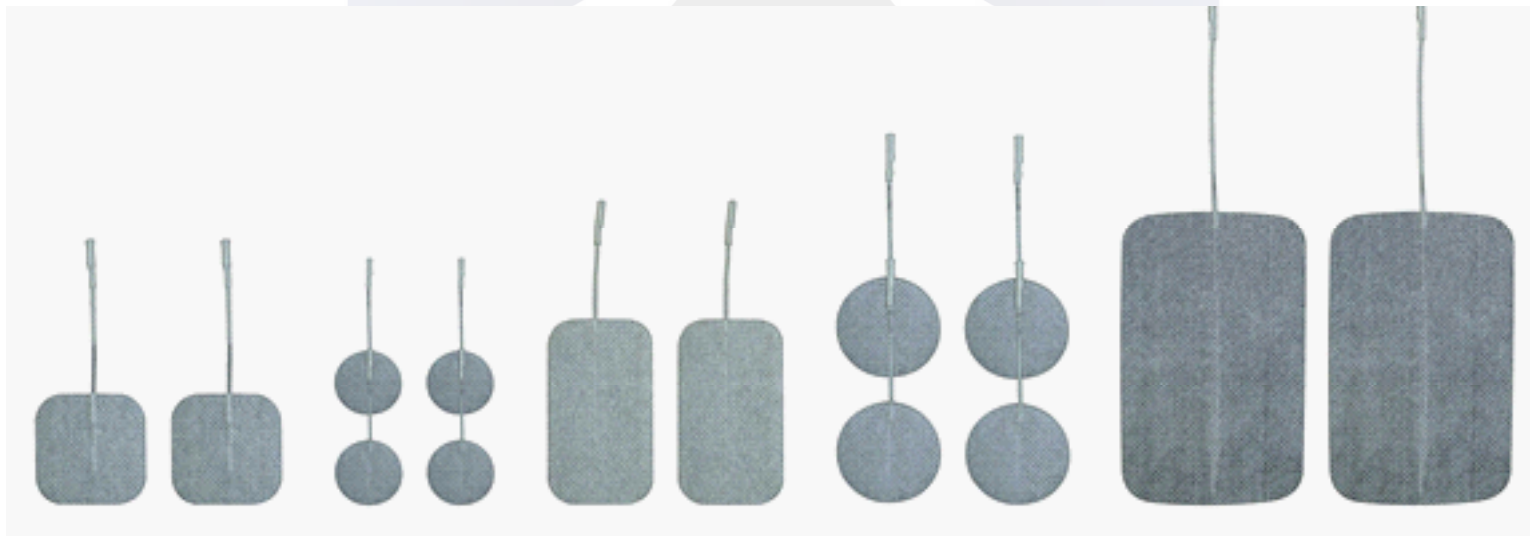


Figure 13. Electrode sizes and current density.



USING THE MENU/PROG BUTTON

USING THE PROG BUTTON

SELECT THE PRE-PROGRAMMED PROTOCOLS

Turn the equipment on as described above. Press briefly the **PROG** button and press the **SET** button to select the **PROGRAMMED** protocols. Next, the information of the first treatment protocol in the equipment will appear on the display. Use the **SET** button to select another protocol. See the details in the tables below. If this is the chosen protocol, press the **PROG** button once more. The display will show the parameters for the selected protocol, including or not including the intensity desired. Then, just press the **START** button and, in case the intensity was not adjusted previously, select the intensity of current desired.

Proceed the same way to select any of the protocols available. Just follow the steps above.



USING THE MENU/PROG BUTTON

PROGRAMMING USER PROTOCOLS

To program new protocols, press the **PROG** key briefly and press the **SET** button to select the **USER** protocols. With the **SET** button, choose one of the 20 **USER** protocols available. Adjust the parameters according to the therapeutic needs and press **START**. The last parameters defined will be recorded in the equipment memory. To access the protocols saved by the user, just select the **PROG** button and use the **SET** buttons to choose the number of the desired protocol.

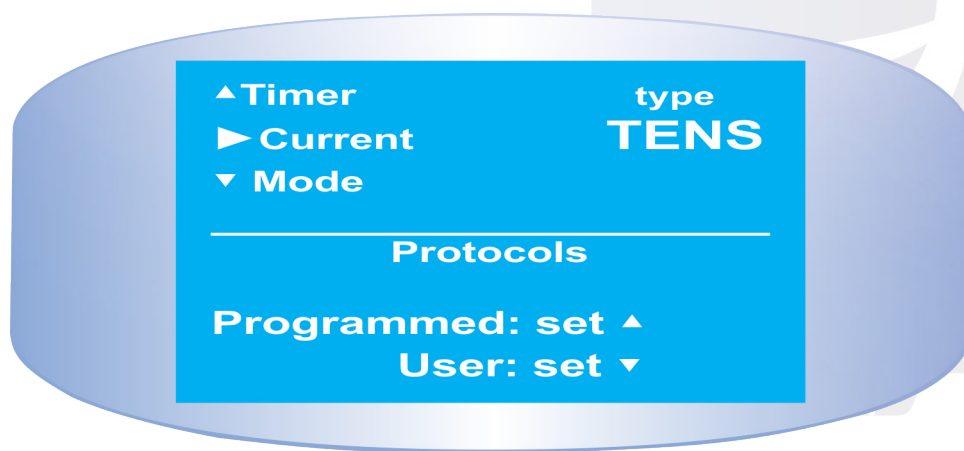


Figure 14. LCD displays the selection of Programmed and User protocols.

PROGRAMMING THE MANUAL STIMULATION

In order to program the manual stimulation, it is necessary to adjust the parameters which will be used in the Therapy with the **FES Sync** (Synchronized FES) or **FES Rec** (Reciprocal FES) modes, except the parameter **OFF**, because it is the therapist who will trigger the stimulation manually. When the **Manual stm** function (Manual Stimulation) is selected, the stimulation is performed manually. For this function to be active, (ON), the therapist must select the **Manual stm** mode using the **SELECT** buttons and with the **SET** buttons choose the Status **ON**. After that, press the **START** button to start the therapy. In this function, the equipment will execute the rise, on and decay ramps, and stop, that is, remain in off (rest) for the time the therapist considers necessary. To start the stimulation again, it is necessary to press **PROG** button, which, once pressed, will make the equipment execute the stimulation again following the rise, on and decay ramps programmed for the type of current **FES Sync** (Synchronized FES) or **FES Rec** (Reciprocal FES). The manual stimulation mode will be active until the end of the programmed treatment time. To cancel it the therapist must press the **STOP** button.



Prog: 1 - TENS	
Post-traumatic Acute Pain	Parameters values
Description: Modulation of Post-traumatic acute pain	
Current	TENS
Mode	Conv
Frequency	100 Hz
Phase duration (Pulse)	200 μ s
Treatment time (Timer)	30 min
Intensity	1 to 120 mA*
Positioning of electrodes	On the painful area

Prog: 2 -TENS	
Post-surgical Acute Pain	Parameters values
Description: Modulation of post-surgical acute pain	
Current	TENS
Mode	Conv
Frequency	150 Hz
Phase duration (Pulse)	75 μ s
Treatment time (Timer)	30 min
Intensity	1 to 120 mA*
Positioning of electrodes	On the painful area

*Manufacturer does not preset the intensity because it needs to be adjusted by the therapist in accordance to the patient's needs and treatment plan. It can be increased or decreased on the appropriate channel by pushing the up and down button.



CLINICAL RESOURCES LIBRARY - CLINICAL PROTOCOLS

Prog: 3 - TENS	
Chronic Intractable Pain	Parameters values
Description: Modulation of chronic intractable pain	
Current	TENS
Mode	Conv
Frequency	40 Hz
Phase duration (Pulse)	150 μ s
Treatment time (Timer)	30 min
Intensity	1 - 120 mA*
Positioning of electrodes	One electrode channel on the dermatome corresponding to the pain and the second on the nerve root corresponding to the dermatome in which the pain is localized

Prog: 4 - RUSSIAN	
Muscle re-education	Parameters values
Description: Muscle re-education	
Current	Russian
Mode	Sync
Burst duration (Duty cycle)	10%
Burst Frequency (Burst freq)	50 Hz
Rise	1 s
On	3 s
Decay	1 s
Off	3 s
Treatment time (Timer)	15 min
Intensity	1 - 120 mA*
Positioning of electrodes	On the muscular center or on the motor muscular point

*Manufacturer does not preset the intensity because it needs to be adjusted by the therapist in accordance to the patient's needs and treatment plan. It can be increased or decreased on the appropriate channel by pushing the up and down button.



Prog: 5 - RUSSIAN	
Maintaining or Increasing Range of Motion	Parameters values
Description: Maintaining or increasing range of motion	
Current	Russian
Mode	Sync
Burst duration (Duty cycle)	50%
Burst Frequency (Burst freq)	50 Hz
Rise	3 s
On	8 s
Decay	3 s
Off	16 s
Treatment time (Timer)	25 min
Intensity	1 to 120 mA*
Positioning of electrodes	On the muscular center or on the motor muscular point

*Manufacturer does not preset the intensity because it needs to be adjusted by the therapist in accordance to the patient's needs and treatment plan. It can be increased or decreased on the appropriate channel by pushing the up and down button.



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ACCESSORIES ACCOMPANYING NEURODYN II

Ibramed **NEURODYN II** contains accessories designed to meet the requirements of electromagnetic comparability accessories (accessories code **03018108**, **02049011** and **02049031**).

PART NUMBER	QUANTITY	ITEM DESCRIPTION
03018108	01	Cable PP 2 X 0,75 with 1,50MT Black Plug 180° NEMA 2P with Plug 180° FDA
02049011	01	Cable 09 Kit for NeuroII (Blue/Green 2 ways each)
02049031	01	Cable 38 Electrostimulation Kit (Black/Orange 2 ways)
03026031	02	Electrode - Valu Trode - Model VL4545 (four/electrode/pkg)
03040008	01	Digital Operations Manual Neurodyn II FDA
03019012	01	Protection fuse 20AG 2A
03026009	01	Protection Fuse Chart
03026003	01	Bag sapphire line



REPLACEMENT ACCESSORIES

This list of replacement accessories are designed for use with the **NEURODYN II** Electro Stimulator. When ordering, provide the respective part numbers, description, and quantity desired.

The use of accessories, cables and electrodes other than those intended for this specific equipment may significantly degrade the performance of the emissions and immunity. **DO NOT USE** accessories, cables and electrodes from **NEURODYN II** equipment on other equipment or medical electro systems.

TROUBLESHOOTING

What may initially look like a problem is rarely a defect. Before calling customer support, please check the items described below:

PROBLEMS	SOLUTIONS
The equipment does not turn on 1.	Is the power cable properly connected? If not, connect it. Also check the wall socket.
The equipment does not turn on 2.	Have you checked the safety fuse? Check if there is a bad contact. Check if the value is correct as stated in the instructions.
The equipment is turned on but does not emit current to patient 1.	Have you followed the recommendations for correct use the equipment as mentioned in the instructions? Check and repeat the steps in the controllers, indications and operation section.
The equipment is turned on but does not emit current to patient 2.	Have you checked the electrodes and the connecting cables to the patient? Check if the cable plug is adequately inserted in the equipment. Check if the electrodes are adequately placed on the patient's body.
The equipment does not turn on and/or work properly.	- Check if the amount of gel is enough. - Check if the electrodes are worn properly.



MAINTENANCE, WARRANTY AND TECHNICAL SUPPORT

MAINTENANCE

For safe use of the equipment, it is recommended to have it inspected and undergo preventive maintenance at IBRAMED or an authorized technical center every 12 months. The manufacturer IBRAMED only assumes liability for the technical features and equipment safety provided the unit is used according to the instructions for use contained in the manual, when maintenance, repairs and modifications are undertaken solely by the factory or authorized agents, and in the event of a breakdown when the components that can cause a security risk to the appliance are replaced by original spare parts. If requested, IBRAMED will provide technical documentation (circuit diagrams, lists of parts and components etc) necessary for the repair of any equipment. We assume no responsibility for repairs without prior explicit written permission from IBRAMED.

WARRANTY

IBRAMED, Indústria Brasileira de Equipamentos Médicos., here identified to the consumer through the following address and telephone number: Av. Dr. Carlos Burgos, 2800, Jd Itália, Amparo/SP, Brazil; Phone: +55 19 3817 9633 provides product-warranty for eighteen (18) months insofar as the conditions set for warranty terms are followed by the user as mentioned below.

WARRANTY TERMS

- 1) IBRAMED warrants that this product is free of manufacturing defects for eighteen (18) continuous months, provided the set terms presented in these instructions for use are followed.
- 2) The warranty period takes effect from the date of purchase and applies to the original purchaser only, even in the event of a product being transferred to a third party. The warranty covers the replacement of component parts and labor required to repair defects whenever the presence of such manufacturing defects can be determined.
- 3) Customer Service during the warranty period will be provided exclusively at IBRAMED sale points by IBRAMED itself or another agent designated by the manufacturer.
- 4) The warranty does not cover damage caused to the product resulting from:
 - a) Failure to follow the specifications and recommendations detailed in these instructions for use during installation or use of the product.
 - b) Accidents or acts of God, connections to electrical system with inappropriate voltage and/or subjected to excessive fluctuation or overcharge.



MAINTENANCE, WARRANTY AND TECHNICAL SUPPORT

c) Misuse, lack of reasonable care, product alterations, modifications or repairs undertaken by individuals or entities not authorized by IBRAMED.

d) Removal or adulteration of the equipment serial number.

e) Damage during Transport.

5) The legal warranty does not cover: expenses incurred during product installation or transport to the plant or sale point, labor, materials, parts and adjustments necessary to the readiness of the premises in view of the installation of the device, such as but not limited to electric net, masonry, hydraulic network, grounding system, as well as their requirements.

6) The warranty does not cover parts subjected to natural wear, such as but not limited to control buttons, control keys, handles and moving parts, radiofrequency applicators, cooling applicator, cables, connectors, device cabinets, pedal, infrared thermometer.

7) The selling points are neither authorized to alter the conditions mentioned in this document nor take any commitment on behalf of IBRAMED.

TECHNICAL SUPPORT

If you have any doubts or problems related to the operation of your equipment, please contact:

IBRAMED USA REPRESENTATIVE

QS Health

223 E Flager Street, Suite 402

Miami – FL 33131

Sales: 1.888.275.0025 x 2

Phone: 1.786.254.7723

Fax: 786.358.6072

Email: sales@qs-health.com

Website: www.ibramed.us



DANGER

Do not alter this equipment. Any unauthorized modification can affect the safety of this equipment.

Never make unauthorized repairs.



CEFAI – IBRAMED Center for Education and Advanced Training

IBRAMED Equipment goes beyond technology. It also provides knowledge! Science constitutes our differential value and we effectively take advantage of its benefits in order to ensure patient safety and thereby maximize results.

IBRAMED develops products with scientific support of the most recent medical studies published in major scientific journals in the areas of biological, health and exact.

Access to the knowledge database is guaranteed by CEFAI (IBRAMED Center for Education and Advanced Training) whose goal is to provide technical and scientific support as well as current literature on therapies and their applicability while our treatment choices are always thoroughly selected according to the best and latest clinical criteria. CEFAI takes into account the personal and professional development of all its partners and customers.

CEFAI invites both students and professionals in the fields of Physical Rehabilitation, Esthetics, Physiotherapy, Dermatology and Esthetic Medicine to take part in free courses, workshops, and the best Postgraduate *Lato Sensu* courses in the areas of physical rehabilitation and esthetics.

Special attention is also given to those interested in visiting our structure. Whatever your professional development needs, we'll be right by your side to provide you with unconditional support.

We are happy to assist you!

Contact – **cefai@conexaocefai.com.br**
www.conexaocefai.com.br
+55 19 3808. 2348

Thanks,

IBRAMED – A matter of respect!





QUESTÃO DE RESPEITO

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